

Claims

1. Scattered light smoke detector with an optical measuring chamber, having a sensor arrangement (2) with at least one light source (12, 12') and one light receiver (11), and a labyrinth system (7) with screens (16) arranged on the periphery of the measuring chamber, the at least one light source (12, 12') and the light receiver (12, 12') each being arranged in a housing (14, 15; 13), characterized in that the above-mentioned housings (14, 15; 13) have an elongated shape and a small window opening, and that the at least one light source (12, 12') and light receiver (11) are arranged in the rear part of their housings (14, 15; 13), so that between the window openings of the housings (14, 15; 13) and the light-penetrated optical surfaces of the at least one light source (12, 12') and/or light receiver (11) a relatively large gap is formed.
2. Smoke detector according to Claim 1, characterized in that the stated gap is greater than the diameter of the stated optical surfaces.
3. Smoke detector according to Claim 1 or 2, characterized in that the measuring chamber is delimited upward by a carrier disc (6), from which the stated housings (14, 15; 13) extend downward, and that the labyrinth system (7) forms a lid-like component which can be fixed to the carrier disc and has a floor and a side wall, and which can be plugged onto the carrier disc (6) from below.
4. Smoke detector according to Claim 1 or 2, characterized in that at least one of the window openings of the above-mentioned housings (14, 15) is enclosed by a one-part frame.
5. Smoke detector according to Claim 4, characterized in that the above-mentioned housings (14, 15; 13), apart from the window openings, are open downward, and that the floor of the above-mentioned component has lids for the housings (14, 15; 13).
6. Smoke detector according to one of Claims 3 to 5, characterized in that in the measuring chamber between the light exit and entry side of the housings (14, 15; 13) and the screens (16) opposite them, a compact, open scattering space is formed.
7. Smoke detector according to one of Claims 3 to 6, characterized in that the housings (14, 15; 13) have grooves for fixing polarisation filters.

BEST AVAILABLE COPY

10

8. Smoke detector according to one of Claims 3 to 7, characterized in that the surfaces, which face each other, of the carrier disc (6) and the floor of the component which forms the labyrinth system (7) have corrugation.

5 9. Smoke detector according to Claim 8, characterized in that the screens (16) and the corrugated surfaces of the carrier disc (6) and of the floor of the above-mentioned component have a glossy surface.

10 10. Smoke detector according to one of Claims 1 to 9, characterized in that the screens (16) which are arranged on the periphery of the measuring chamber are substantially L-shaped, the shorter leg pointing into the measuring chamber, and that the gap between adjacent screens (16) is a multiple of their thickness.

15 11. Smoke detector according to one of Claims 3 to 10, characterized in that on the carrier disc (6), a multiple plug (5) for the electrical connection of the detector to a plug connector (4) which is provided in a detector base (1) is arranged, and that the electrical connection is made by a tangential movement of the multiple plug (5) and/or plug connector (4).

12. Smoke detector according to Claim 11, characterized in that the multiple plug (5) is preferably integrated on the top side of the carrier disc (6), in so-called insert technology.

BEST AVAILABLE COPY